Data sheet

HP recommends Windows.

HP Z230 Tower and SFF Workstations

Affordable performance and flexibility, re-defined.

May 2015

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HP Z230 SFF

HP Z230 Tower

Workstations that fit your workspace

Create a totally immersive work environment for those who demand reliability and performance on a budget. Designed for heavy workloads, the HP Z230 delivers next-generation processor and graphics technologies in two redesigned models. Choose between an amazingly capable Small Form Factor (SFF) for constrained spaces, and a new compact Tower that is impressively expandable.

Rock solid reliability, affordably priced

With the HP Z230 SFF and Tower Workstations, you will gain peace of mind from our extreme test and validation processes designed for always-on environments. You can control your environmental impact better than ever[1] while lowering your total cost of ownership with a 92% efficient power supply. Work smarter with software tools designed to deliver better, smarter performance—the HP Z230 Tower Workstation has earned a wide range of ISV certifications.

Totally immersive. Perfectly productive.

Engineered to impress, the redesigned HP Z230 Small Form Factor Workstation provides the capability and flexibility you demand in a 57% smaller form factor than the tower. You can realize impressive performance, unbelievable storage capacity, wide variety of I/O slots and ports and amazing flexibility while retaining the small form factor size.

The HP Z230 Tower Workstation features complete computing power in a new compact design. Don't let its compact design fool you, it is remarkably expandable to ensure you'll always have all the computing power you need. It is designed to grow along with your business so that you can scale and expand by adding more storage and connectivity when you need it. Enhance your storage capacity with six available drive bays including a 2.5-inch HD bay for high speed solid state drives. The optional ergonomic Handle in Top ODD Bay allows tool free installation of SSD Hard Drives for easy expandability.[2,3]

Boost your storage performance with RAID, solid state drives, or get the best of both worlds by combining large hard drives with an optional solid state drive as a cache device.[4] Optimize these workstations for peak performance with HP Performance Advisor that easily configures your system with the best settings designed for specific applications.[5]

The HP Z230 has power to spare—and share.

Enjoy the latest in performance and energy efficiency from Intel's next generation processor architecture. The latest Intel® Xeon® processor E3-1200 v3 family[6] and rich graphics are designed to keep up with your workload. You can choose between cost-effective integrated graphics or powerful 2D or 3D discrete graphics.[7,8] Keep your work front-and-center with support for up to six monitors[7,8] and easily connect your peripherals and devices using the four PCIe slots[9], one PCI input/output slot,* ten external USB ports and the fast charging USB port.* With HP RGS you can take your graphics intensive workstation applications wherever you go and collaborate with colleagues around the office or around the world, in real time.

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HP Z230 Workstations

	HP Z230 Tower[10]	HP Z230 SFF[10]
Form Factor	Tower	Small Form Factor
Available Operating Systems	Windows 8.1 Pro 64 bit. Other editions available** Windows 8 Pro 64-bit and other editions available** Windows 8.1 64-bit** Windows 7 Professional 32 bit. Other editions available*** HP Linux Installer Kit SUSE Linux Enterprise Desktop 11 (90 day support) Ubuntu Desktop Linux 14.04	

Available Processors[6,11]

Processor	GHz	Max Turbo GHz	Cache	Memory	Cores	Hyper-Threading	Intel® vPro™ Technology	Intel HD Graphics
Intel® Pentium® G3240 processor	3.1	-	3 MB	1333 MT/s	2	N	N	Yes
Intel Core™ i3-4150 processor	3.5	-	3 MB	1600 MT/s	2	Y	N	4400
Intel Core i3-4160 processor	3.6	-	3 MB	1600 MT/s	2	Y	N	4400
Intel Core i3-4350 processor	3.6	-	4 MB	1600 MT/s	2	Y	N	4600
Intel Core i5-4590 processor	3.3	3.7	6 MB	1600 MT/s	4	N	Y	4600
Intel Core i5-4690 processor	3.5	3.9	6 MB	1600 MT/s	4	N	Y	4600
Intel Core i7-4790 processor	3.6	4.0	8 MB	1600 MT/s	4	Y	Y	4600
Intel Xeon® processor E3-1225v3	3.2	3.6	8 MB	1600 MT/s	4	N	Y	P4600
Intel Xeon processor E3-1226v3	3.3	3.7	8 MB	1600 MT/s	4	N	Y	P4600
Intel Xeon processor E3-1231v3	3.4	3.8	8 MB	1600 MT/s	4	Y	Y	No
Intel Xeon processor E3-1240v3	3.4	3.8	8 MB	1600 MT/s	4	Y	Y	No
Intel Xeon processor E3-1241v3	3.5	3.9	8 MB	1600 MT/s	4	Y	Y	No
Intel Xeon processor E3-1245v3	3.4	3.8	8 MB	1600 MT/s	4	Y	Y	P4600
Intel Xeon processor E3-1246v3	3.5	3.9	8 MB	1600 MT/s	4	Y	Y	P4600
Intel Xeon processor E3-1271v3	3.6	4.0	8 MB	1600 MT/s	4	Y	Y	No
Intel Xeon processor E3-1280v3	3.6	40	8 MB	1600 MT/s	4	Y	Y	No
Intel Xeon processor E3-1281v3	3.7	4.1	8 MB	1600 MT/s	4	Y	Y	No

Chipset	Intel® C226 chipset	
Memory[12,13]	4 DIMM slots, up to 32 GB ECC/non-ECC, DDR3L-1600 (MT/s) (ECC/non-ECC choice and actual memory speed dependent on processor capability)	
Drive Controllers[14]	Integrated SATA Controller, RAID 0,1 supported: 5 ports, 6 Gb/s	
Storage[15]	Up to (3) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2, 3 or 4 TB (12 TB max) Up to (3) 2.5-inch SATA SSD drives: 128, 180, 240, 256, 480, 512 GB, or 1 TB (3 TB max) Up to (1) 2.5-inch SATA self-encrypting solid state boot drive (SED SSD): 256 GB Up to (1) 2.5-inch SATA self-encrypting 7200 rpm boot drive (SED): 180, 500 GB Up to (1) PCIe SSD: HP Z Turbo Drive 256 GB, HP Z Turbo Drive 512 GB**** Optional (1) 64 GB SSD Disk Cache Module can be used in conjunction with up to (2) SATA HDDs in RAID 0/RAID 1 using Intel® Smart Response Technology.	Up to (2) 3.5-inch 7200 rpm SATA drives: 500 GB, 1, 2, 3 or 4 TB (8 TB max) Up to (2) 2.5-inch SATA SSD drives: 128, 180, 240, 256, 480, 512 GB (1 TB max) Up to (1) 2.5-inch SATA self-encrypting SSD (SED SSD): 256 GB Up to (1) 2.5-inch SATA self-encrypting 7200 rpm HDD (SED): 180, 500 GB Up to (1) PCIe SSD: HP Z Turbo Drive 256 GB, HP Z Turbo Drive 512 GB**** Optional (1) 64 GB SSD Disk Cache Module can be used in conjunction with up to (2) SATA HDDs in RAID 0/RAID 1 using Intel® Smart Response Technology.
Optical Storage[16,17]	DVD-ROM, DVD+/-RW DL Super Multi, HP Blu-ray Writer, HP 15-in-1 Media Card Reader	
Drive Bays	2 internal 3.5-inch bays, 1 internal 2.5-inch bay (for SSD only), 1 external slim ODD bay, 2 external Half-Height 5.25-inch bays	1 internal 3.5-inch bay, 1 internal 2.5-inch bay (for SSD only), 1 internal/external 3.5-inch bay, 1 external Half-Height 5.25-inch bay
Expansion Slots	1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot, 1 PCI 32-bit.	1 PCIe Gen3 x16, 1 PCIe Gen2 x4 slot/x16 connector, 1 PCIe Gen2 x1 slot/x4 connector, 1 PCIe Gen2 x1 slot. All slots are Low Profile.
Available Graphics	Integrated Graphics: Intel® HD Graphics available on select processors as above Professional 2D: NVIDIA® NVS™ 310, NVIDIA® NVS™ 315, NVIDIA® NVS™ 510 Entry 3D: AMD FirePro™ V3900, AMD FirePro™ W2100, NVIDIA® Quadro® K420, NVIDIA® Quadro® K600, NVIDIA® Quadro® K620 Mid-range 3D: AMD FirePro™ W5100, NVIDIA® Quadro® K2000, NVIDIA® Quadro® K2200 High-end 3D: AMD FirePro™ W7000 (AMO† only), AMD FirePro™ W7100 (AMO† only), NVIDIA® Quadro® K4200	Integrated Graphics: Intel® HD Graphics available on select processors as above Professional 2D: NVIDIA® NVS™ 310, NVIDIA® NVS™ 315, NVIDIA® NVS™ 510 Entry 3D: AMD FirePro™ V3900, AMD FirePro™ W2100, NVIDIA® Quadro® K420, NVIDIA® Quadro® K600, NVIDIA® Quadro® K620, NVIDIA® Quadro® K1200
Audio	High Definition Integrated Realtek ALC221 Audio and integrated speaker; optional HP Thin USB Powered Speakers	
Network	Integrated Intel I217LM PCIe GbE Controller; Optional Intel Ethernet I210-T1 PCIe as 2nd NIC; WLAN Intel 7260 802.11 a/b/g/n/ PCIe x 1 NIC	
Remote Management	Intel® vPro™ with Intel® AMT 9.0	
Ports	Front: 2 USB 3.0; 1 USB 2.0; 1 USB 2.0 Charging Data Port; 1 microphone in; 1 headphone out Rear: 2 USB 3.0; 4 USB 2.0; 1 DVI-I single link and 2 DisplayPort 1.2 (for use with Intel HD Graphics); 1 audio in; 1 audio out; 1 microphone; 1 serial (optional); 2 PS/2; RJ-45 (LoM), optional 2 IEEE 1394b ports Internal: 1 USB 3.0, 3 USB 2.0 1 Thunderbolt™ 2[8,19] via optional add-in PCIe card	Front: 2 USB 3.0; 2 USB 2.0; 1 microphone in; 1 headphone out Rear: 2 USB 3.0; 4 USB 2.0; 3 DisplayPort 1.2 (for use with Intel HD Graphics); 1 audio in; 1 audio out; 1 standard/1 serial (optional); 2 PS/2; RJ-45 (LoM), optional 2 IEEE 1394b ports (PCIe card), Optional HP Thunderbolt-2 PCIe 1-port I/O Card Internal: 1 USB 3.0, 3 USB 2.0 1 Thunderbolt™ 2[8,19] via optional add-in PCIe card

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HP Z230 Workstations

	HP Z230 Tower[10]	HP Z230 SFF[10]
Remote Technology	HP Remote Graphics Software (RGS)	
Input Devices	HP PS/2 keyboard, HP USB keyboard, HP USB CCID smart card keyboard, HP PS/2 mouse, HP USB optical mouse, HP USB 1000 dpi laser mouse, HP Optical 3-button optical mouse, USB SpaceMouse Pro, USB SpacePilot Pro	
Dimensions (H x W x D)	15.7 x 6.7 x 17.4 in (39.93 x 17.04 x 44.25 cm)	Standard desktop orientation: 3.95 x 13.3 x 15.0 in (10.5 x 33.83 x 38.15 cm)
Power Supply	400-watt 92% efficient power supply, 320 W, Standard Efficiency Power Supply available in some countries.	240-watt, 92% Efficiency power supply; 240-watt Standard Efficiency Power Supply available in some countries.
Compatible Displays (screen size diagonally measured)	HP DreamColor LP2480zx Professional Display; HP ZR30w 30-inch S-IPS LCD Monitor; HP ZR2740w 27-inch LED Backlit IPS Monitor; HP ZR2440w 24-inch LED Backlit IPS Monitor; HP Z Display Z30i 30-inch IPS LED Backlit Monitor; HP Z Display Z27i 27-inch IPS LED Backlit Monitor; HP Z Display Z24i 24-inch IPS LED Backlit Monitor; HP Z Display Z23i 23-inch IPS LED Backlit Monitor; HP Z Display Z22i 21.5-inch IPS LED Backlit Monitor	
Warranty[18]	Limited three-year Mon-Fri 8-5 next business day, parts, labor and 24x7 phone support, terms and conditions may vary. One-year warranty option available in selected countries.	

* Available on Z230 Tower only

** Not all features are available in all editions of Windows 8 and 8.1. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows 8.1 functionality. See www.microsoft.com.

*** This system may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See microsoft.com/windows/windows-7/ for details.

**** Each drive requires a PCIe x4 (minimum)

† After-Market Option

1 When comparing previous generations of HP Workstations.

2 Sold separately both as a configure-to-order (CTO) or after-market option (AMO).

3 Does not allow 4 SSDs/SFF drives (CTO/AMO)

4 Requires a compatible Intel® Core processor, enabled chipset, Intel® Rapid Storage technology software and non-SED HDD + optional 2.5" SSD flash cache module. Intel® Smart Response Technology is only available on select HP systems. Read performance levels assume that the data to be read is in the cache. Depending on system configuration, results may vary.

5 Requires Windows 7 or Windows 8.

6 Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance. See intel.com/info/em64t for more information.

7 Requires both NVIDIA NVS 510 and NVS 310 graphics cards to be installed.

8 Optional feature sold separately or as an add on feature.

9 PCIe Gen 3 is a new technology; card availability may be limited.

10 Some features may not be available in all regions.

11 Intel® Hyper-Threading - The hyper-threading feature is designed to improve performance of multi-threaded software products; please contact your software provider to determine software compatibility. Not all customers or software applications will benefit from the use of hyperthreading. Go to intel.com/info/hyperthreading for more information, including which processors support HT Technology.

12 Each processor supports up to 2 channels of DDR3 memory. To realize full performance at least 1 DIMM must be inserted into each channel.

13 Intel® Xeon E3, Intel Core i3 and Intel Pentium processors can support either ECC or non-ECC memory. Intel Core i5 and i7 processors only support non-ECC memory.

14 SATA hardware RAID is not supported on Linux systems. The Linux kernel, with built-in software RAID, provides excellent functionality and performance. It is a good alternative to hardware-based RAID. Please visit h20000.www2.hp.com/bc/docs/support/SupportManual/c00060684/c00060684.pdf for RAID capabilities with Linux.

15 For hard drives, 1 GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less.

16 Actual speeds may vary. Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Note that DVD-RAM cannot read or write to 2.6 GB Single Sided/5.2 GB Double Sided – Version 1.0 media.

17 Blu-ray Writer - As Blu-ray is a new format containing new technologies, certain disc, digital connection, compatibility and/or performance issues may arise, and do not constitute defects in the product. Flawless playback on all systems is not guaranteed. In order for some Blu-ray titles to play, they may require a DVI or HDMI digital connection and your display may require HDCP support. HD DVD movies cannot be played on this workstation.

18 HP Care Pack Services extends service contracts beyond the standard warranties. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at hp.com/go/lookuptool. Additional HP Care Pack Services information by product is available at hp.com/go/cpc. Service levels and response times for HP Care Packs may vary depending on your geographic location.

19 Thunderbolt™ 2 is available via an optional add-in card. Thunderbolt is new technology. Thunderbolt cable and Thunderbolt device (sold separately) must be compatible with Windows. To determine whether your device is Thunderbolt Certified for Windows, see thunderbolttechnology.net/products.

Learn more hp.com/go/z230

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